

Index

- 4-mile OPDS, 5-14, B-5
- 4-ton bolster trailer, 2-17, 5-3, 5-4
- 5-mile pipeline set, 2-1, 5-4
- 5-ton, cargo long bed, 2-17
- 7 1/2-ton crane, 2-17, 5-9, 5-22
- 12-foot, noncollapsible, discharge, 4-inch hose, 5-16
- 12-foot, noncollapsible, suction, 6-inch hose, 5-16
- 12-foot, suction, 4-inch hose assembly, 5-17
- 40-ton crane, 2-17
- 50- and 500-foot, lightweight, collapsible, discharge, 6-inch hose, 5-16
- 350-GPM pump, 7-1
 - 4-inch, single-stage, 7-7
- 600-foot, 6-inch, hose-reel assembly, 5-14
- 800-GPM mainline pump, 5-19, 5-22
 - 6-inch, 3-stage, 2-10, 4-6
- 3,000-gallon tank, 7-4
- 6,000- and 10,000-pound rough-terrain forklift, 2-17
- 10,000-gallon tank, 7-5
- 20,000-gallon tank, 7-5
- 50,000-gallon tank, 7-5, 7-25
 - TPT, optional configuration layout, 7-19
- 210,000-gallon tank, 7-6, 7-25

- access roads, 7-9, 7-15, 7-18
- adapters
 - double-grooved, 7-17
 - female, 7-7
 - male, 7-7
- AFCS. *See* **Army Facilities Component System (AFCS)**
- AFFF. *See* **aqueous film-forming foam (AFFF)**

- air reconnaissance. *See* **reconnaissance, air**
- aligning clamps. *See* **clamp(s), aligning**
- aligning pipelines, 5-11
- aluminum pipe coupling, 2-3
- aluminum pipeline facilities, 2-1
- American Petroleum Institute (API) gravity, 4-1, 4-2
- anchoring pipelines, 5-12
- API gravity. *See* **American Petroleum Institute (API) gravity**
- aqueous film-forming foam (AFFF), 7-9
- area, 7-17, 7-18
 - as a factor in TPT site selection, 7-14
 - staking out an, 7-10
 - clearing an, 7-10
- Army Facilities Component System (AFCS), 2-1, 2-5, 5-4, 5-18, 5-19, 7-3
- assembling pipe, B-12
- assigning crews, 5-8
- atmospheric pressure, 4-3, 4-4. *See also* **pressure**

- ball valve. *See* **valve(s), ball**
- barrel(s) (bbl), 5-13, 7-1
- barrel(s) per hour (BPH), 4-4
- base terminals. *See* **terminals, base**
- bbl. *See* **barrel(s) (bbl)**
- bending pipe, B-13. *See also* **pipe(s)**
- berm(s), 7-13
 - basin drain, 7-10, 7-25
 - construction, 7-13
 - design, 7-20
- Bernoulli equation, A-1
- BFTA. *See* **bulk-fuel tank assembly (BFTA)**

- bolted coupling, B-1. *See also* **coupling(s)**
- BPH. *See* **barrel(s) per hour (BPH)**
- brass hammers, 5-9, 6-2
- brush hooks, 5-9
- bulk-fuel
 - distribution system, 1-1, 3-1
 - tank assembly (BFTA), 7-6
- buried pipe, B-11. *See also* **pipe(s)**
 - procedures for, B-12
- calibration, 5-25
- cam lock(s), 7-7
- camouflage, 3-4
- capacity, 4-6
- cathodic protection, B-11, B-12
- centrifugal pump, 2-10, 7-8. *See also* **pump(s)**
- cfm. *See* **cubic foot(feet) per minute (cfm)**
- characteristics of petroleum fuels, 4-1
- check valve. *See* **valve(s), check**
- CIMIC. *See* **civil military cooperation (CIMIC)**
- civil military cooperation (CIMIC), 1-6
- clamp(s)
 - aligning, B-7
 - leak-repair, 2-12
 - overcoupling-leak, 6-3
 - pit-leak, 6-3
 - repairs, B-22, B-26
 - split-leak, 6-3
- cleaning and packing a pipeline, 5-13
- cleaning pipe, B-3, B-7
- cleaning rags, 5-9, B-1
- clearing and leveling a pipeline route, 5-3
- coating and wrapping pipe, B-12
- cold bends, B-14, B-15
- collapsible fabric tanks, 7-4, 7-5, 7-6
- combat heavy engineer battalion, 1-8, 3-1, 7-9
- communications, 5-25
- communication zone (COMMZ), 1-4, 1-5
- COMMZ. *See* **communication zone (COMMZ)**
- complexes, 7-3
- compressed-air testing, 5-26
- computing friction loss, 4-7
- construction
 - checklist for pump stations, 5-22
 - materials, 7-22
 - methods, B-6
 - staging areas, 3-2, 5-4, 5-7, 5-8
 - standards, 5-1, B-11
- contaminated-fuel, 7-17
 - module layout, 7-17
- continental United States (CONUS), 3-1
- CONUS. *See* **continental United States (CONUS)**
- conversion formulas, 4-1, A-1
- corrosion prevention, B-11
- couple pipeline, 5-9
- coupled pipelines, expansion and contraction of, 5-13
- coupling(s), 5-2
 - gaskets, 5-2
 - procedures, 5-2, 5-11, B-3
 - replacement, 6-4
- criteria for hydrostatic testing. *See* **hydrostatic testing, criteria for**
- cubic foot(feet) per minute (cfm), 2-16
- culvert
 - installation, 5-17
 - pipe, 2-14
 - size, 5-17
- cutting, grooving, and beveling machine, 2-15
- Darcy-Weisbach equation, A-2
- deadweight tester, B-3
- Defense Fuel Supply Center (DFSC), 3-1
- Defense Logistics Agency (DLA), 3-1
- design fuel, 4-1
- DFSC. *See* **Defense Fuel Supply Center (DFSC)**
- ditching, B-12, B-18
- DLA. *See* **Defense Logistics Agency (DLA)**

- double-grooved adapters. *See* **adapters, double-grooved**
- drainage, 7-14
- drift pin, 5-9
- dynamic head, 4-3

- earthwork, 7-9
- elevation, 7-17
- emergency head capacity, 4-6
- emergency repairs, B-23
- ENCOM. *See* **engineer command (ENCOM)**
- end caps, 5-9
- engineer
 - branch, 1-8
 - command (ENCOM), 3-1, 3-3
 - construction group, 3-1
 - pipeline construction support company, 3-2
 - port construction company, 3-2
- expansion
 - and contraction of coupled pipelines, 5-13, B-5
 - devices, 5-13

- female adapters. *See* **adapters, female**
- field
 - location of pumping stations, 4-18
 - reconnaissance. *See* **reconnaissance, field**
- files, B-1, B-25
- filling and testing a pipeline, 5-12
- filling a trench, B-13
- filter separator, 7-7
- fire and explosion, 6-2
- fire-suppression equipment, 7-16
- flood pumps, 4-15
- floodlight sets, 7-16
- flow resistance, 4-5
- friction loss, 4-7
 - reducing, 4-9
 - using double lines, 4-10
 - using larger pipe, 4-9
- FSSPs. *See* **fuel-system supply points (FSSPs)**
- fuel
 - dispensing-assembly layout, 7-17
 - inhalation and skin contact, 6-3
 - system supply points (FSSPs), 1-1
- GAA grease. *See* **general agency agreement (GAA) grease**
- gallon(s) per minute (GPM), 1-4, 2-10, 5-16, A-2
- gap support structure, 5-4
- gate valve. *See* **valve(s), gate**
- general
 - agency agreement (GAA) grease, 5-9, B-1
 - mechanic's automotive set, 2-16
- GPM. *See* **gallon(s) per minute (GPM)**
- gravity system, 4-14
- ground reconnaissance. *See* **reconnaissance, ground**

- hand auger, 5-9
- hatchet, 5-9
- head terminals. *See* **terminals, head**
- heavier-weight pipe, 4-17
- hose
 - collapsible, dispensing, 1-, 1 1/2-, 2-, and 4-inch, 5-17
 - connection devices, 7-7
- hose-line systems, 5-13
- hose lines, 7-6, B-27
- host-nation support, 1-5
- hydraulic
 - design, 7-6
 - drivehead kit, 2-15
 - gradient triangle, 4-12, 4-15 through 4-17
- hydrostatic testing, 5-23
 - criteria for, 5-25
 - using fresh water, 5-23
 - using fuel, 5-24
 - using salt water, 5-23
- ID. *See* **inside diameter (ID)**
- impellers, 7-8
- improvised structures, 5-19

- Inland Petroleum Distribution System (IPDS), 1-7, 2-8, 2-10, 3-2, 4-6
 - packaging symbols for the, 2-1
 - pipes in the, 2-2
- inside diameter (ID), 2-2, 4-17
- inspections, 5-25
- installing a coupling, B-4. *See also* **coupling(s), procedures**
- intermediate terminals. *See* **terminals, intermediate**
- International Standards Organization (ISO), 3-2, 5-14
- IPDS. *See* **Inland Petroleum Distribution System (IPDS)**
- ISO. *See* **International Standards Organization (ISO)**
- jackrabbit start, 5-9
- Joint Petroleum Office (JPO), 3-1
- JPO. *See* **Joint Petroleum Office (JPO)**
- launcher and receiver assembly, 2-8
- lazy board, B-1, B-3
- leak-repair clamp. *See* **clamp(s), leak-repair**
- liners, 7-23
- lizard, B-13
- local population, as a factor in TPT site selection, 7-9
- locating obstructions, 5-27
- long bolts, 5-9
- lowering pipe into a trench, B-13
- machetes, 5-9
- mainline pump-station set, 2-1
- main supply route (MSR), 3-3
- male adapter. *See* **adapter, male**
- map and aerial photograph studies, 3-4
- map layout and profile of pipeline route, 3-5
- markings for a pipeline, B-20
- MAWP. *See* **maximum allowable working pressure (MAWP)**
- maximum allowable working pressure (MAWP), 2-3, 5-14, 5-15, 5-16. *See also* **pressure**
- measuring pressure. *See* **pressure, measuring**
- METT-T. *See* **mission, enemy, terrain, troops, and time available (METT-T)**
- military sealift command (MSC), 3-1
- military-standard (MIL-STD), B-20
- MIL-STD. *See* **military-standard (MIL-STD)**
- mission, enemy, terrain, troops, and time available (METT-T), 3-2
- modular design, 4-11
- MOGAS. *See* **motor gasoline (MOGAS)**
- modified table of organization and equipment (MTOE), 5-25
- motor gasoline (MOGAS), 4-4
- MSC. *See* **military sealift command (MSC)**
- MSR. *See* **main supply route (MSR)**
- MTOE. *See* **modified table of organization and equipment (MTOE)**
- nails, 5-9
- NATO. *See* **North Atlantic Treaty Organization (NATO)**
- NCOIC. *See* **noncommissioned officer in charge (NCOIC)**
- nestable culvert material, 5-4
- noncommissioned officer in charge (NCOIC), 5-24
- nonemergency repairs, B-23
- nonrising-stem valve. *See* **valve(s), nonrising-stem**
- normal head capacity, 4-6
- North Atlantic Treaty Organization (NATO), 1-6
- obstacle crossing, 5-3, 5-17
- officer in charge (OIC), 5-24

- Offshore Petroleum Distribution System (OPDS), 1-8, 5-14, 7-7, B-5
- OIC. *See* **officer in charge (OIC)**
- OPDS. *See* **Offshore Petroleum Distribution System (OPDS)**
- operating graphs, 4-6
- Operations and Training Officer (US Army) (S3), 3-4
- operator maintenance, 6-1
- organizational maintenance, 6-1
- overcoupling-leak clamp. *See* **clamp(s) overcoupling-leak**
- overhead crossings, 5-18
- pad construction, 5-21, 7-13
- permanent repairs, 6-4, B-22
- petroleum, oil, and lubricants (POL), 1-7, 7-9
- petroleum terminals, 7-1
- pig walkers, 5-25
- pipeline
 - components, 5-2
 - construction, grooved-coupling, steel-tubing set, 2-16
 - jacks, 5-9, B-1
 - painting, B-19
 - strainer assembly, 2-10
 - suspension-bridge set, 2-1
 - valves. *See* **valve(s), pipeline**
 - vent assembly, 2-7
- pipe(s), 2-2, 5-1
 - ends, 5-2, 5-11
 - fitter's general tool kit, 2-16
 - fitter's supplemental tool kit, 2-16
 - fittings, 2-12
 - friction loss in, 4-7
 - repair accessories, 2-12
 - replacement, 6-5
 - saw, B-2
 - steel, B-1
 - weight, 4-17
- pit-leak clamp. *See* **clamp(s), pit-leak**
- placing pipe and valves, 5-8. *See also* **valve(s)**
- plot plan, 7-9
- plug valve. *See* **valve(s), plug**
- POL. *See* **petroleum, oil, and lubricants (POL)**
- port support operations, 3-2
- portable facilities, 7-4
- position welding, B-6
- positioning the pipe, B-4
- pound(s) per square inch (psi), 1-6, 2-8, 4-3, 4-15, 5-15, 5-25, 5-26, A-1
- precautions in trenching, B-12
- pressure, 4-2, 6-2, 6-3
 - control valve. *See* **valve(s), pressure-control measuring, 5-23**
 - reducing stations, 4-17
 - reducing valve. *See* **valve(s), pressure-reducing**
 - regulating valve. *See* **valve(s), pressure-regulating**
- projectiles, 6-2
- protective coating, B-19
- psi. *See* **pound(s) per square inch (psi)**
- pump placement, 5-21
- pump stations, 5-19
 - locating downstream, 4-19
 - locating upstream, 4-18
 - location of, 4-13
 - spacing of, 4-11
- pumping pressures, 4-5
- pumps, 2-10
 - flood, 4-15
- pup joints, 2-13, 5-4
- quartermaster branch, 1-7
- rebeveling and cutting, B-7
- reconnaissance
 - air, 3-5
 - field, 3-5
 - ground, 3-5
- reducing friction loss. *See* **friction loss, reducing**
- regulating facilities, 7-3
- reverse polarity, B-7

- revolution(s) per minute (RPM), 2-5, 7-7
- Reynold's number, A-2
- rising-stem valve. *See* **valve(s), rising-stem**
- road access, 7-10, 7-15, 7-17, 7-18
 - as a factor in TPT site selection, 7-9
- road and railroad crossings, 5-17
- roll welding, B-7
- route selection
 - considerations in, 3-3
 - procedures for, 3-4
- RPM. *See* **revolution(s) per minute (RPM)**

- S&P. *See* **stake and platform (S&P)**
- S3. *See* **Operations and Training Officer (US Army) (S3)**
- safety precautions, 6-2
- SALMS. *See* **Single-Anchor Leg-Mooring System (SALMS)**
- sandbags, 7-22
- saws, 5-9. *See also* **pipe(s), saw**
- SEE. *See* **small emplacement excavator (SEE)**
- SG. *See* **specific gravity (SG)**
- shovels, 2-16, 5-9
- Single-Anchor Leg-Mooring System (SALMS), 1-8, 5-14
- site
 - criteria, 7-6
 - layout, 7-14
 - preparation, 7-10
 - selection, 5-19, 7-9, 7-20
- small emplacement excavator (SEE), 1-8, 2-15, 2-17, 5-9, 5-12, B-12
- small pits, B-21
- soil conditions, 7-6
- specific gravity (SG), 4-1, 4-3
- split-leak clamp. *See* **clamp(s), split-leak**
- stake and platform (S&P), 5-4
- stake colors, 5-2
- stake pipeline route, 5-2
- STANAG. *See* **standardization agreement (STANAG)**
- standard pad layout, 5-21
- standardization agreement (STANAG), 1-4
- static head, 4-2, 4-17
- stations
 - on a downgrade, 4-17
 - on an upgrade, 4-16
 - on equal elevations, 4-15
- steel pipe. *See* **pipe(s), steel**
- steep grades, 4-19
- stream, river, and ravine crossing, 5-18
- supplemental pipeline-pump-station set, 2-16
- supply levels, 1-5
- support maintenance, 6-1
- suspension-bridge kits, 5-4
- suspension bridges, 2-15, 5-18
- swabbing and cleaning pipes, B-3

- table of organization and equipment (TOE), 2-14
- tactical petroleum terminal (TPT), 1-1, 1-4, 1-6, 3-2, 5-17, 7-1, 7-6, 7-7. *See also* **earthwork; site selection**
 - layout, 7-14, 7-16
 - responsibilities for, 7-1
- TAMMC. *See* **Theater Army Material Management Center (TAMMC)**
- tank farm(s), 7-1, 7-3
 - assembly layouts, 7-16
- tank pads, 7-13, 7-20
- tanker-truck, 7-17
- tapping machine, B-2
- task organization for construction, 5-1
- temperature, 4-2
- temporary repairs
 - for coupled pipelines, 6-3
 - for welded pipelines, B-21
- terminals. *See also* **tactical petroleum terminal (TPT)**
 - base, 7-1

- head, 7-3
- intermediate, 7-3
- terrain, 3-4
 - as a factor in TPT site selection, 7-9
- testing pipeline systems, 5-22
- theater army, 1-7, 3-1
- Theater Army Material Management Center (TAMMC), 1-7, 3-1
- theater of operations (TO), 1-1, 1-4, 1-5, 7-1, B-5
- thermal-relief valve. *See* **valve(s), thermal-relief**
- throughput, 4-4
- tie-ins, B-10
- TO. *See* **theater of operations (TO)**
- TOE. *See* **table of organization and equipment (TOE)**
- topographic features, 4-11, 7-6
- TPT. *See* **tactical petroleum terminal (TPT)**
- transportation support requirements, 3-2
- trenching methods, B-12

- U-loop, 5-13
- underwater crossings, B-18
- US Navy, 1-8

- valve(s). *See also* **placing pipe and valves**
 - ball, 2-8
 - check, 2-5, 5-3
 - determining location of, 5-3
 - gate, 2-3, 5-3
 - nonrising-stem, 2-4
 - pipeline, 2-3
 - plug, 2-5
 - pressure-control, 2-8
 - pressure-reducing, 2-6, 4-17
 - pressure-regulating, 2-6
 - rising-stem, 2-3
 - thermal-relief, 2-6
 - vent, 5-3
- vapor pressure, 4-3
- vent valves. *See* **valve(s), vent**
- viscosity, 4-2, 4-6

- water availability, as a factor in TPT site section, 7-9
- weight density, 4-1
- welded steel pipeline construction set, 2-16
- welded pipeline systems, B-5
- welded pipelines, B-21
- welder's steel supplemental pipeline construction set, 2-17
- welding repairs, B-19
- wrenches, 2-16, 5-9
- wrinkle bends, B-16

- Z-loop, 5-13